

The First Medical Report  
OF THE  
HOSPITAL FOR CONSUMPTION  
AND  
DISEASES OF THE CHEST,  
PRESENTED TO THE  
COMMITTEE OF MANAGEMENT,  
BY THE  
PHYSICIANS OF THE INSTITUTION.

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1849.

PROMPTON HOSPITAL  
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*To the Committee of Management of the Hospital for  
Consumption and Diseases of the Chest.*

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GENTLEMEN,

In compliance with your request, we beg to submit the following Medical Report of this Hospital, from the date of its establishment in the year 1842, to the end of the year 1848 :—

Previously to the close of last year, it seemed undesirable to publish a Report, for the following reasons :—The number of Consumptive Patients relieved, when the Hospital was opened at Chelsea, was comparatively small, —the Hospital there accommodated, as you are aware, only twenty Patients, and the Out-Patients were not nearly so numerous as those who are at present in attendance. The Hospital at Brompton, which now admits 85, at first received but 30 Patients ; the number of Out-Patients who then attended was scarcely a third of those who are now receiving relief. Thus, the number of Consumptive cases was not, in our opinion, sufficiently large, before the present period, to warrant the deduction of general conclusions.

It will be observed that although the number of Patients who have received relief amounts to 10,939, not more than 4,358 are included in this Report. Amongst those who applied for relief were many suffering either from Bronchitis in various degrees of aggravation, or from other diseases of the organs of the Chest ; not a few from Coughs, symptomatic of disorders of distant organs, or from painful affections of the Chest, not connected with pulmonary disease. The prevalence of Influenza at one period very much swelled the list of applicants ; some have presented themselves with varieties of indigestion, which, in consequence of incidental debility and other symptoms, had induced the apprehension of Phthisis ; and it has often been a source of great satisfaction to us to be able, after careful examination, to discharge a considerable number of such individuals, with the consolatory assurance that there were no evidences of the disease they dreaded. These facts will explain the difference between the number of Patients relieved, and that included in this Report, which is intended to apply only to Consumption. The Report, also, must

be received, not as including all the facts concerning every Consumptive Patient relieved by your Institution, but as containing such of them as have been carefully observed in 4,358 cases—a number greater, as regards Consumption, than has heretofore been analyzed for scientific purposes, and having claims to more attention, from its including in it only those in whom the existence of the disease admitted of no doubt.

The Report, though it does not embrace all the points on which it is desirable to make enquiries respecting Phthisis, many of which must be left to the individual labours of the Medical Officers, will, we trust, be found to furnish information calculated to advance Medical Knowledge, and at the same time to interest the friends of the charity. In conclusion, we beg to observe that measures are in progress for ensuring such regularity and correctness in the Hospital Records, as will enable us to furnish in future a medical and statistical report at fixed periods.

We have the honour to be, Gentlemen,

Your obedient Servants,

HAMILTON ROE, M.D.

THEOPH. THOMPSON, M.D.

GEORGE CURSHAM, M.D.

RICHD. P. COTTON, M.D.

RICHARD QUAIN, M.D.

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*Hospital for Consumption, Brompton.*

*April, 1849.*

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# REPORT.

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THIS first Report of the Hospital for Consumption and Diseases of the Chest, is founded on the combined observations of the Physicians by whom it is presented, and is arranged under the following heads:—

- I.—The number of Patients treated, and the facts in their history which have reference to the origin and progress of Consumption.
- II.—Some of the principal signs and symptoms of the disease.
- III.—The duration of the disease, and the results of treatment.

Various other subjects are still under investigation: such as the influence of locality, of habits of life, or of previous disease in producing Consumption; the connexion between Scrofula and Consumption; the influence of the disease in suspending or altering various secretions and functions of the body; the characteristic signs of Phthisis in its earliest stage; the further effects of reputed remedies; &c. Observations upon these subjects will be made in future Reports.

## 1st.—*Number of Patients.*

On referring to Table I., it will be seen that the entire number of cases received into the Hospital, from its commencement to 31st December, 1848, is 888; and of those treated as Out-Patients, 10,051.

TABLE I.

Total number of Cases treated in the Hospital from September, 1842,									
to 31st December, 1848	..	..	..	..	..	..	..	888	
Total number of cases treated as Out-Patients from September, 1842,									
to 31st December, 1848	..	..	..	..	..	..	..	10,051	

As this Report has reference only to cases of Phthisis, all other Diseases of the Chest are excluded from it; and consequently, as will be seen in Table II., the number of cases is reduced to 4,358—of whom 888 were In-Patients, and 3,470 Out-Patients.

TABLE II.

				Total.
Total number of cases of <i>Phthisis</i> treated as <i>In-Patients</i> , from September, 1842, to December 31st, 1848	..	..	..	888
Total number of Cases of <i>Phthisis</i> treated as <i>Out-Patients</i> , from September, 1842, to December 31st, 1848	..	..	..	3,470
				4,358

### 2nd.—Influence of Sex and Age.

*a—Sex.*—In the preceding Table it will be observed, that of the 888 *In-Patients*, 542 were males, and 346 were females—the males constituting 61 per cent., and the females about 39 per cent. of the whole number. Of the 3,470 *Out-Patients*, 2,137 were males, and 1,333 were females,—the males here also being, as nearly as possible, 61 per cent., and the females a little more than 38 per cent. When it is remembered that the number of females in London somewhat exceeds that of males, the relative prevalence of the disease in the latter must be considered in reality slightly greater than even appears from the Table. A much greater liability to *Phthisis* is thus shown to exist in the male than in the female sex. This is not in accordance with the opinion entertained by writers of authority on the subject in this country and on the Continent, still we can see no reason for doubting the conclusion to be drawn from these Tables, as the facts are of a nature which scarcely admit of any error. The excess of males over females, thus shown, cannot be attributed to the greater number of that sex who attend at hospitals generally, as the converse is known to be the case. At St. George's Hospital, in one district, for example, the proportion of females to males during the past year, amongst the Physician's Patients, was as about 15 to 9. At the London Hospital, in another district, the female *Out-Patients* of the same class were to the males in nearly a similar ratio. The correctness of the conclusion as to the greater liability of men to Consumption in the Metropolis, is further shown by a reference to the Mortality Tables of the Registrar-General. From the year 1843 to 1846, inclusive, the number of male deaths from *Phthisis* in London was 14,836; whereas that of females was only 12,988: being in the proportion of about 53 per cent. of males to 47 per cent. of females. The proportion at Brompton being 61 per cent. of males to 39 per cent. of females.

It has not escaped our observation, that in the country the relative proportion of *Phthisical* males and females differs from that shown here. In the



year 1842, the return of the Registrar-General gives the number of male deaths from Phthisis in the Provinces as 24,048, and that of females 28,098.

*b—Age.*—The annexed Table, No. III., shows the ages in decennial periods of 2,679 males and 1,679 females, labouring under Pulmonary Consumption, and the per centages of the sexes at each period of life.

TABLE III.

Ages.	Males.	Per Cent.	Females.	Per Cent.	Total.	Per Cent.
0 to 5 ..	9	0·33	12	0·71	21	0·48
5 to 15 ..	125	4·66	112	6·67	237	5·43
15 to 25 ..	695	25·94	574	34·19	1,269	29·11
25 to 35 ..	953	35·50	578	34·42	1,531	35·13
35 to 45 ..	570	21·27	271	16·14	841	19·29
45 to 55 ..	251	9·37	110	6·55	361	8·28
55 to 65 ..	68	2·53	21	1·25	89	2·04
65 to 75 ..	8	0·29	1	·05	9	0·20
Total Males ..	2,679	Total Females ..	1,679	..	4,358	..

Viewing the sexes collectively, the first conclusion to be drawn from the examination of this Table is, that the period of life at which the liability to Consumption is greatest in both sexes, is from 25 to 35 years of age. The disease occurred at this period of life in 953 males, out of 2,679 cases, or in nearly 36 per cent. of the whole; and in 578 females out of 1,679 cases, or in a little more than 34 per cent. If we compare the numbers affected at the different periods of life under and above that just mentioned, and hence infer the liability to Consumption in the sexes during these periods, we find that it is not alike in both; for example, under 25 years of age the liability is greater in females than in males by nearly 10 per cent.: whilst above 35, the liability is greater in males than in females by about 12 per cent.

Comparing the liability of individuals of the same sex at different periods of life, we find that in males the disease is slightly less frequent before the age of 25 than it is after 35, being in the proportion of about 31 to 33; whereas in females, the liability to the disease is considerably greater before the age of 25 than after 35, being in the proportion of about 41 to 24. This difference, perhaps, depends in some measure on the influence of hereditary predisposition, which, as will subsequently be shown, manifests its effects much more frequently in females than in males, and therefore it may be expected to do so in early life. On the other hand, males are subjected to various injurious influences resulting from their pursuits, habits of life, trades, and occupations, tending to the de-

velopment of the disease at a later period of life. The practical conclusion, however, to be derived from the examination of these facts, is this, that the period of human life from 25 to 35 is a most important one in both sexes, as far as the development of Consumptive disease is concerned: hence the peculiar necessity of guarding against all those circumstances which may tend to the production of the disease, and of carefully watching the earliest indications of its approach. The vigilance always necessary, is especially requisite in the case of females from 15 to 25—a period of life at which the liability to disease is nearly as great as it is from 25 to 35, when it has reached its maximum. On looking over the columns of the Table which contain the numbers of the Patients, we notice that they are very few at first, *i.e.*, below 5 years of age—they gradually rise up to the period of 35 years of age, and as gradually fall until they become as few between the ages of 65 and 75 as they are under 5 years of age.\*

\* The comparisons made in the preceding observations, afford, no doubt, a pretty accurate estimate of the relative liability of different ages to Consumption. Feeling however, that these conclusions may be in some degree modified by a reference to the greater or less numbers of persons living at different ages, the following Table has been prepared:—

TABLE IV.

*Showing a Reduced Scale of the Population in London at different Ages, according to the last Census, and the per centage of the Cases of Phthisis in relation to these numbers.*

Ages.	The numbers of Cases of Phthisis, Males and Females.	Reduced Scale of Population, Males and Females.	Ratio Per Cent. of Cases of Phthisis.
5 to 15 ..	237	3,709	6
15 to 25 ..	1,269	3,922	32
25 to 35 ..	1,531	3,651	42
35 to 45 ..	841	2,560	32
45 to 55 ..	361	1,660	21
55 to 65 ..	89	945	09
65 to 75 ..	9	487	2

The most obvious inferences to be drawn from the above Table are—1st, that from 25 to 35 is in reality the period of life at which the liability to Consumption is greatest in both sexes; 2ndly, that after that age, the frequency with which the disease occurs, is greater than is shown by Table III.; for, instead of being 35, 19, 8, and 2 per cent. in the consecutive periods from 25 to 65, the consecutive per centages taken from the numbers living at these periods, are 42, 32, 21, 9,



## 3rd.—Social Condition.

Under this head is distinguished the single, married, or widowed state of the Patients.

As the influence of social condition upon the development of disease has been discussed by statistical writers, we cannot with propriety omit giving the results of the inquiries made respecting the Consumptive Patients treated at Brompton; they are shewn in the following Table.

TABLE V.

*Showing the Social Condition of 4,056 Individuals affected with Phthisis, treated at the Hospital, from September, 1842, to December 31, 1848.*

Social Condition and Age.	Males.	Per Centage of the Total No. of Males.	Females	Per Centage of the Total No. of Females.	Total of both Sexes.	Per Cent. of both Sexes.
Single .. { Under 25	633	25.2	540	35.0	1,173	28.9
{ Over 25	475	18.8	319	20.6	794	19.5
Married { Under 25	100	3.9	94	6.0	194	4.8
{ Over 25	1,240	49.3	489	31.7	1,729	42.6
Widowed .. All Ages.	66	2.6	100	6.4	166	4.0
Total Males ..	2,514	Total Females	1,542	Total, both Sexes .. }	4,056	—

With the view of ascertaining whether Consumption owes its origin in any degree more than any other disease to the influence of social condition, a Table has been prepared showing the social condition of 2,028 Patients of a General Hospital, *i. e.*, one-half the number of the Consumptive Patients tabulated above.

TABLE VI.

*Showing the Social Condition of 2,028} Individuals, treated as In and Out-Patients at a General Hospital, exclusive of Cases of Phthisis.*

Social Condition and Age.	Males.	Per Centage of Total Number of Males.	Females	Per Centage of the Number of Females.	Total.	Per Cent. of both Sexes.
Single .. { Under 25	309	35.6	468	40.3	777	38.3
{ Over 25	87	10.0	112	9.6	199	9.8
Married . { Under 25	24	2.7	49	4.2	73	3.6
{ Over 25	406	46.7	400	34.4	806	39.8
Widowed .. All Ages .	42	4.8	131	11.2	173	8.5
Total Males ..	868	Total Females.	1,160	Total, both Sexes .. }	2,028	—

In the following Table, an abstract is given of the two preceding Tables, for the purpose of instituting a comparison between them.

TABLE VII.

*Showing comparatively (per cent.) the Number of Individuals, Married, Single, or Widowed, amongst the Consumptive Patients of this Hospital, and the Non-Consumptive Patients of a General Hospital at certain Ages.*

Social Condition and Age.	Consumptive.		Non-Consumptive.		
	Males Per Cent.	Females Per Cent.	Males Per Cent.	Females Per Cent.	
Single .. .. {	Under 25 ..	25.2	35.0	35.6	40.3
	Over 25 ..	18.8	20.6	10.0	9.6
Married .. .. {	Under 25 ..	3.9	6.0	2.7	4.2
	Over 25 ..	49.5	31.7	46.7	34.4
Widowed ..	All Ages ..	2.6	6.4	4.8	11.2

It will be observed that amongst the Consumptive Patients, single, and under 25, females exceed males by 10 per cent., a fact which agrees with what is already stated at page 9; where it is shewn that Consumption is more frequent in females than in males under the age of 25. In the single above 25, the proportions of the sexes are nearly equal. Of the Consumptive Patients married under 25, the numbers are few, but the females exceed the males by more than one-third,—a fact in some degree to be accounted for by the greater number of females—as compared with males—who marry at an early age; of those married over 25, the males exceed the females by 18 per cent. This difference may, in some degree, be owing to Consumptive unmarried females dying under 25 in a larger proportion than males at the same period of life, as just now stated. Of the widowed Consumptive Patients, the females are to the males in the proportion of 3 to 1.

On comparing the Consumptive with the non-Consumptive Patients, it will be perceived that the single persons under 25, including males and females attend in larger numbers at a General Hospital in London than at the Consumption Hospital; possibly because at the former more young persons seek relief in consequence of the greater facility with which they can attend, than at Brompton, which is some little distance from town. On the other hand, the number of single persons over 25 at this Hospital, is nearly double that treated at a General Hospital. Comparing the married persons of both Institutions, the Consumptive males and females under 25 will be found to be slightly more numerous than non-Consumptive Patients at a General Hospital, *i.e.*, in the proportion of about 9 to 7; those over 25 are in nearly similar proportions at both.

It will further be observed, that amongst the Consumptive Patients married



over 25, the males exceed the females by about 18 per cent, and the non-Consumptive males exceed the non-Consumptive females by about 12 per cent. On the other hand, amongst the Consumptive Patients unmarried under 25, the females exceed the males by about 10 per cent., whilst the non-Consumptive females exceed the males by only about 5 per cent.; these facts suggest some interesting conclusions, and also tend to confirm the inference already drawn, that Consumption is more fatal to females than to males under 25 years of age.

The widowed non-Consumptive are more than double the number of widowed Consumptive Patients, whilst the number of widows of both classes is much greater than that of widowers.

*4th.—Trades and Occupations*

Are next to be considered, with a view to ascertain how far they influence the production of Phthisis. The following Table gives the occupations of 4,358 Consumptive Patients, that is, of 2,679 males, and of 1,679 females.

TABLE VIII.

*Showing the Occupations of 4,358 Patients labouring under Phthisis, treated as In and Out-Patients, from September, 1842, to December 31, 1848.*

MALES—Total, 2,679.

In-Door.		Out-Door.		Mixed.	
Clerks, Warehousemen, and Shopmen ... ..	314	Labourers of various kinds ... ..	490	Carpenters ... ..	120
Mechanics ... ..	270	Coachmen and Cabmen... ..	109	Painters and Glaziers	73
Servants ... ..	237	Butchers ... ..	15		
Tailors ... ..	192	Various occupations .	184		
Shoemakers ... ..	127				
Printers and Compositors	104				
Weavers and Glovers ...	22				
Bakers ... ..	45				
Various ... ..	146				
None, or under 15 ...	231				
Total In-door ...	1,688	Total Out-door ...	798	Total Mixed ...	193

FEMALES—Total, 1,679.

In-door.		Out-Door.		Mixed.	
Servants, or persons engaged in in-door occupations ... ..	836				
Milliners, Dress-makers, Needlewomen, and Straw-bonnet Makers .	312				
Laundresses ... ..	82	None.		None.	
Governesses ... ..	10				
No occupation, or under 15 ... ..	439				
Total In-door ...	1,679				



In forming this Table, we have distinguished in-door from out-door occupations, and have placed in a separate column those which partook of the character of both.

Those occupations are classified separately in which the numbers of persons engaged in them were sufficiently large to entitle them to a separate consideration; when, however, they were too few to justify the deduction of any special conclusions, or the circumstances under which they were placed were similar, their occupations were grouped with those to which, in their leading features, they appeared to be analogous: thus, Tailors, Shoemakers, Servants, &c., are kept separate, whilst Clerks, Warehousemen, and Shopmen, are classed together; Wheelwrights and Turners are placed with Carpenters; Engineers and Whitesmiths will be found under the head of Mechanics; Milliners and Needlewomen form one class.

With the view of ascertaining the influence of a particular occupation in promoting or counteracting a tendency to Consumption, the following Table of the occupations of non-Phthisical Patients attending a General Hospital is annexed—the number being 2,179, or exactly one-half of the Consumptive cases, affords a ready means of making a comparison :—

TABLE IX.

*Showing the Occupations in 2,179 Cases relieved at a General Hospital as Out-Patients, excluding Cases of Phthisis.*

MALES, 885.					
In-Door.		Out-Door.		Mixed.	
Clerks, Warehousemen, Shopmen, &c. ... ..	26	Labourers of various kinds ... ..	94	Carpenters ... ..	32
Mechanics ... ..	81	Coachmen and Cab- men... ..	30	Painters and Glaziers	33
Servants ... ..	38	Butchers ... ..	4	Various ... ..	66
Tailors ... ..	51	Various ... ..	42		
Shoemakers ... ..	42				
Printers and Compositors	9				
Bakers ... ..	9				
Weavers ... ..	4				
Various ... ..	97				
None, or under 15 ...	227				
	584		170		131
FEMALES, 1,294.					
In-Door.		Out-Door.		Mixed.	
Servants, or persons en- gaged in in-door occu- pations ... ..	833	Various, as Fruit- women, &c. ...	20	Various ... ..	5
Milliners, Needlewomen, &c. ... ..	169				
Laundresses ... ..	55				
None, or under 15 ...	212				
	1,269		20		5

In the first place, it is desirable to ascertain the influence of in-door and out-door occupations respectively in producing or warding off Consumption; but in consequence of the mixed character of the occupations in which many of the Patients are engaged, it is difficult to obtain sufficiently precise information to justify very accurate conclusions. The relative liability of persons following in-door and out-door occupations to Consumption would seem, from the records of this Hospital to be as 63 per cent. of in-door males to 30 per cent. of out-door; and all the Consumptive Females followed in-door occupations. If it were possible to ascertain the precise number of persons engaged in the various in-door and out-door occupations in London, we might, by comparing them with the numbers just stated, arrive at correct conclusions as to the effects which such occupations are calculated to produce; but in the absence of this information we must confine ourselves to a comparison of the apparent influence which in-door and out-door occupations have in the production of Phthisis, with that which they appear to have in inducing other diseases. At this Hospital the in-door occupations of males and females form 77 per cent. of the whole; at a General Hospital, 85 per cent. Out-door occupations form 18 per cent. of the whole at this Hospital; at a General Hospital, 9 per cent. The difference, therefore, is not that which would warrant the inference that in-door occupations in themselves have a greater tendency to produce Consumption than any other disease; on the contrary, the in-door occupations of the Patients at this Hospital are 8 per cent. less than at a General Hospital, whereas the out-door are 9 per cent more.

With a view to ascertain the tendency which any particular occupation has to induce Phthisis, as compared with that which it may have to induce any other disease, an abstract of the two preceding Tables has been prepared. This abstract shows the proportion each particular occupation bears to that of all other occupations, at this Hospital, and also at a General Hospital. A column is introduced, in which is given the total, in round numbers, of the persons engaged in some of these occupations in London.

TABLE X.

*Showing the relative proportion, to the whole Number of Cases, of Persons following similar Occupations, at the Consumption Hospital, and at a General Hospital, respectively.*

MALES.	Per Centage of 2,679 Male Patients at the Consumption Hospital.	Per Centage of 885 Male Patients at a General Hospital.	MALE POPULATION OF LONDON, 800,000.  Number of Persons engaged in these Trades and Occupations in London.
Labourers, Out-door ..	18.2	10.6	50,000
Clerks, Warehousemen, and Shopmen .. ..	} 11.7	3.0	
In-door Servants .. ..	8.8	4.3	40,000
Tailors .. .. .	7.2	5.8	20,000
Shoemakers .. .. .	4.7	4.7	25,000
Carpenters .. .. .	4.4	3.6	18,000
Coachmen and Cabmen .	4.0	3.5	
Printers and Compositors	3.9	1.0	6,600
FEMALES.	Per Centage of 1,679 Female cases at the Con- sumption Hos- pital.	Per Centage of 1,294 Female cases at a Gene- ral Hospital.	FEMALE POPULATION, 1,000,000.
In-door Servants and Per- sons engaged in Do- mestic Occupations ..	} 49.8	64.3	130,000
Milliners, and Persons similarly engaged ..	} 18.6	13.0	21,000

An examination of the first column of this Table shows that a much larger number of persons following certain employments, seek relief at this Hospital, suffering from Phthisis, than of those following other occupations; for example, there are 18 per cent. of out-door labourers amongst our patients, to 4 per cent. of printers and compositors, and there are other employments not specified here, in which the proportions are still smaller. Recollecting, however, that the numbers of persons pursuing different occupations vary very greatly, and that this difference, must of course, affect the number of persons in each occupation liable to disease, it will be felt that no accurate conclusion can be drawn from these numbers alone. It would be necessary for this purpose that the actual numbers of persons engaged in each of these occupations, within the sphere of the operations of this institution, should be ascertained. This not being practicable, we avail ourselves of the means at our disposal, of



comparing the numbers which represent the occupations of the consumptive at this Hospital, with those which represent similar occupations at one of the London Hospitals for disease in general. This comparison will afford us the means of judging how far such pursuits render those who are engaged in them more liable to Consumption than to other diseases. Thus, if we compare the 18 per cent. of out-door labourers with the  $10\frac{1}{2}$  per cent. of the same class who attend a General Hospital, we can say that there are nine consumptive persons of this class to five of the same class suffering from other diseases, requiring Hospital assistance. Whilst, if we compare the 3.9 per cent. of printers and compositors at this Hospital, with the 1 per cent. of the same occupation at a General Hospital, we conclude that printers and compositors are more liable to Consumption than to other diseases, in the proportion of nearly 4 to 1, and, therefore, are sufferers to a much greater extent from this disease than the class last named. Amongst clerks and shopmen, the proportions are nearly the same as the last, viz., 4 to 1. Proceeding with the comparison, we find two in-door male servants at this Hospital, for one at a general Hospital. Tailors are in the proportion of 7 to 6, &c., &c. Amongst females, the great variety and number of persons included under the designation of domestic employments, forbid any attempt at drawing inference as to the special influence of their occupations. The next class is that of needlewomen and milliners, which, whilst it represents  $18\frac{1}{2}$  per cent. of all the females attending this Hospital, is found to constitute 13 per cent. of the sick at a General Hospital; thus, whilst the persons following these occupations are shown to be very liable to Consumption, it will be noticed that they constitute also a large proportion of those attending a General Hospital. Tailors likewise are numerous at both institutions. Clerks and shopmen, printers and compositors, as already mentioned, rank high amongst the patients at this institution. Hence, the inference is a correct one, which assigns to these different occupations the power of exerting a more or less injurious influence on the health of those engaged in them; for whilst some are rendered liable to both Consumption and disease in general, others who are less liable to disease in general, are particularly so to Consumption.

In drawing there inferences, however, as to the effects of different employments, it cannot be denied that other influences are often conjoined with those necessarily belonging to the occupation itself: for example, hereditary predisposition, intemperance, deficient food, want of cleanliness, &c. These circumstances must all be kept in view in forming any opinion as to the injurious effects on health of any particular occupation. On the other hand, there are certain

pursuits which, it may be said, almost independently of these conditions, exercise a directly injurious influence on the health of those engaged in them—particularly those which compel persons to work in close, ill-ventilated, and overheated rooms, sitting for many hours each day in a posture unfavourable to the free action of the muscles of respiration, breathing an impure atmosphere and restricted from taking exercise in the open air. These are the circumstances which appear to render so painfully prominent the class of Clerks, Milliners, Printers, Tailors, in-door Servants, &c.: persons thus occupied soon feel the effects of these injurious influences, and if they have any tendency to tubercular disease, it rarely fails to develope itself. Several striking instances presented themselves of young men and women from the country, previously in good health, who soon fell victims to Phthisis under these circumstances. It is greatly to be desired that the employers of such persons should endeavour to obviate these evils, by not requiring too long service, by allowing time for exercise in the open air, and taking care that the offices in which the employments are carried on are properly warmed and ventilated.

#### *5th.—Hereditary Predisposition.*

General observation and experience having led to the conclusion that certain diseases are transmitted from the parent to the child, with not less certainty than many physical characters, not inconsistent with health, it seems desirable on this occasion to exhibit the extent and degree of this power of transmission rather than to question its existence. Disease may or may not be transmitted to the offspring of a diseased parent; or, if transmitted, may not be developed. Counteracting circumstances, chiefly those connected with the protection and preservation of health, may suffice to prevent results which, in their absence, would have occurred. Hence one or more only of the several children of the same individuals may exhibit the diseases of the parents. The other children, though not apparently diseased, may, on becoming parents, have still the power of transmitting to their offspring the elements of disease, which wait but an occasion, or an exciting cause for their development. Thus we find a diseased parent in one generation having an apparently healthy offspring, and in the next generation an apparently healthy parent with a diseased offspring. This class of facts is of the greatest importance in all inquiries like the present, since conclusions founded on the presence or absence of disease in the parents only, afford too limited an idea of the influence of predisposition. The effect upon the offspring, of disease in the



parent is, however, an important, and indeed the first step in such an inquiry, and to this we propose to limit our present investigation. With this view, we have inquired into the state of health of the parents in a thousand and in cases of pulmonary Consumption; of these 669 were males and 341 were females; and, as is shown in the Table No. XI., 122 of the males, or 18 per cent., were born of Consumptive parents, whilst 124 of the females, or 36 per cent., were born of parents affected with the same disease; or combining all the cases together, we find that, in 1,010 Consumptive Patients, 246 had parents who suffered from the same disease, being about 24½ per cent. of the whole, or nearly one in every four cases. It is quite certain, that if this inquiry were extended, as already stated, to a preceding generation—that is, to grandfather and grandmother, and to collateral relatives—uncles, aunts, brothers, and sisters—that the influence of predisposition would be shown to be still more considerable. It is, however, a remarkable fact, that nearly one in every four of the Consumptive Patients at this Hospital was born of a Consumptive parent.

TABLE XI.

*Showing the number amongst 1,010 Consumptive Patients predisposed to the Disease, by its existence in the preceding generation.*

SEX.	Cases of Consumption.	Predisposed by Disease in Parent.	Per Cent.
Males ..	669	122	18.2
Females ..	341	124	36.3
Total ..	1,010	246	24.4

With the view of ascertaining the extent to which hereditary predisposition influenced some other diseases, and of forming a comparison with Consumption, we have annexed a Table of Cases of Insanity, Table XII.

TABLE XII.

*Showing the number amongst 4,730 Insane Patients who were predisposed to the Disease by its existence in the preceding generation.*

SEX.	Cases of Insanity.	Predisposed by Disease in Parent.	Per Cent.
Males ..	2,611	310	11.9
Females ..	2,119	285	13.4
Total ..	4,730	595	12.5

Insanity\* has been chosen, because its statistics are very accessible, while no doubt can exist as to the frequency with which this disease is transmitted from parent to offspring. The result of the comparison is curious:—We find that, in males, Insanity is an hereditary disease in nearly 12 per cent. of the cases observed, whilst Consumption is so in 18 per cent. In females, Insanity is hereditary in about  $13\frac{1}{2}$  per cent., Consumption in 36 per cent. In both sexes taken together, the per centage of Insanity is  $12\frac{1}{2}$ , of Consumption  $24\frac{1}{2}$ . Thus the probability of Consumption being transmitted to the offspring by a parent affected with that disease, is as two to one when compared with the probability of the transmission of Insanity from an insane parent.

A remarkable fact may be noticed in Table No. XI., illustrating the influence of sex on hereditary predisposition. Eighteen per cent. of the male refer their origin to Consumptive parents, whilst 36 per cent. of the female (or two females to one male) report their parents as having been Consumptive; a careful scrutiny has failed to detect any error in the recorded observations. But the conclusion may be slightly modified, by supposing that females, being more domesticated, know more accurately, and can give better information regarding the histories of their parents.

From these facts, however, the obvious conclusion is, that daughters are more liable to inherit Consumptive disease from their parents than sons in the proportion of two to one. In Insanity, this liability is shown but to a much more limited extent, being little more than one and a-half per

\* TABLE XIII.

*The following Table shows the source from whence the information contained in Table XII. is derived.*

	Insane Males.	Here- ditary in	Per Cent.	Insane Females.	Here- ditary in	Per Cent.	Total.		
							Cass.	Here- ditary.	Per Cent.
Hanwell ..	397	51	12.8	281	27	9.6	678	78	11.5
Bloomingdale (U.S.) ....	1,090	118	10.8	751	89	11.9	1,841	207	11.2
New York ..	1,017	121	11.9	997	152	15.2	2,014	273	13.5
Morningside (Edin.) ..	107	20	18.7	90	17	18.8	197	37	18.8

Considerable uniformity in the results of observation by different persons is here manifested. It is more than probable, however, that the influence of predisposition operates amongst the insane to a greater extent, but that the difficulty of obtaining information causes it to appear thus limited.

ent. greater in the case of daughters. Proceeding a little farther with the investigation, it will be necessary to inquire whether the influence of father or mother, when diseased, extends equally to both sons and daughters. This will be seen in

TABLE XIV.

*Showing the Sexes of the (246) Consumptive Patients from Table XI., and of the Diseased Parents.*

	Males.	Per Cent.	Females.	Per Cent.
Father .....	42	6.2	31	9.
Mother .....	24	3.7	39	11.4
Father and mother .....	12	1.8	10	2.9
Father, and brother, or sister .....	21	3.1	16	4.8
Mother, and brother, or sister .....	19	2.8	22	6.5
Father and mother, and brother or sister, .	4	0.6	6	1.7
Total .....	122	18.2	124	36.3

Omitting those cases in which both parents were Consumptive, and without reference to brothers or sisters, we found the following Table on the abstract of the preceding :—

TABLE XV.

*Showing the Proportion of Consumptive Sons and Daughters to Consumptive Fathers and Mothers respectively.*

	Number of Cases.	Father Consumptive.	Per Cent.	Mother Consumptive.	Per Cent.
Sons.....	106	63	59.4	43	40.6
Daughters.....	108	47	43.5	61	56.5

Both father and mother were Consumptive in the cases of twelve males and ten females. The brothers and sisters, in addition to father and mother, were Consumptive in four males and six females.

The results here shown are very remarkable. The father transmits Consumptive disease to the sons in 59.4 per cent., to the daughters in only 43.5 per cent. The mother to the sons in 40.6 per cent., but to the daughters in 56.5 per cent.

Results remarkably similar, indeed almost identical, are found in Insanity, as shown in the following Table prepared from the last Report of the New York State Lunatic Asylum, the only one in which the facts are given :—



TABLE XVI.

*Showing the Proportions of Insane Sons and Daughters to Insane Fathers and Mothers, respectively.—(From New York Report.)*

	Number of Cases.	Father Insane.	Per Cent.	Mother Insane.	Per Cent.
Sons .. ..	117	64	54.6	53	45.3
Daughters ..	147	67	45.4	80	54.4

Both father and mother were insane in the cases of 4 males and 5 females.

These facts alone, illustrating the influence of sex on the transmission of disease, afford very striking evidence that such transmission takes place. They indicate, also, an important consideration in a social point of view—viz., that those persons who have a tendency to the disease should, before entering on the social relation of married life, reflect on the great probability there is of transmitting this disease to their offspring: the consideration applies to both sexes, but in an especial manner to females; and shows that maternal influence, whether for good or evil, is not less important in a physical than in a moral point of view.

## II. SYMPTOMATOLOGY.

It cannot be doubted that it is an object of the first importance to be able to detect the existence of Phthisis at its very commencement, inasmuch as it is well known that there is a stage in its progress after which cure must be considered almost hopeless; whereas many examples present themselves, in which the detection of the disease at an early period has led to the adoption of such remedies as have practically cured it. No doubt exists that many persons, in whose lungs tubercular matter has been deposited to a limited extent, have been so far restored as to enjoy a fair degree of health, and attain the average duration of human life. In a large proportion of such cases, the physical signs furnished by auscultation and percussion, in conjunction with the general symptoms, leave little doubt regarding the nature of the disease; but not a few instances occur in which, although there are some reasons for sus-

pecting the presence of tubercular deposit, yet the physical signs are either absent, or so indistinct, that the most experienced observers can scarcely detect them. Under these circumstances, additional means of diagnosis are obviously desirable; and the Medical Officers felt it their duty to avail themselves of the opportunity afforded by the large number of Phthisical Patients under their charge, to test the value of all modern means suggested for detecting the disease in its *early* stage.

*a—Spirometer Observations.*—One of these means is an instrument named the Spirometer, intended to ascertain the capacity of the lungs for air, and which may be expected to give indication of the extent to which they are obstructed by tubercular or other deposits. Dr. Hutchinson, who has published a series of valuable observations calling the attention of the profession to the subject, kindly offered us his assistance, and during several months attended at the Hospital for the purpose of testing the instrument. A large proportion of the 415 cases recorded in the Tables which have reference to this subject, were examined under his immediate superintendence; and it is satisfactory to find the results of the examination made by him and others so nearly corresponding, that all are blended in the following Tables.

In Tables XVII. and XVIII. a few characteristic cases are given by way of example, in order to exhibit the amount of deviation from the healthy standard in the first and second stages of Consumption. Dr. Hutchinson has shown that, in a state of health, the vital capacity\* has a relation to the *height* of the individual, increasing in the proportion of eight cubic inches of air for every inch of stature from five to six feet. Cases 3 and 13, in Table XVII., are examples of vital capacity only 14 and 16 inches below the presumed healthy standard. It will be observed that these Patients were above the ordinary height. The calculations, however, which have been published, do not apply to persons above six feet,—observations on men above that height not being sufficiently numerous to determine the healthy standard of their vital capacity. But there are grounds for suspecting that the ratio of increase above six feet exceeds 8 inches for every inch of height. For instance, a man, examined by Dr. Hutchinson, whose height was 6 feet  $11\frac{1}{4}$  inches, had a vital capacity of 434 cubic inches—being in the ratio of more than 14 cubic inches of air to every inch of stature above six feet; and

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\* This term is applied to the utmost quantity of air which a person can *expire* after a deep inspiration.



in some other healthy individuals above six feet, a greater ratio than eight inches for every inch of height has been observed.—It is proper to mention, that Case 3 gradually got worse: within a fortnight the vital capacity was reduced ten inches; he lost weight; and the physical signs, which on the first examination were obscure, soon became conclusive.

Cases 5, 10, and 11, will be seen to present a great deficiency. In all of them, both sides of the lungs were much diseased; and in the two former, Emphysema also existed to a considerable extent.

In Table XVIII. all the cases show a marked deficiency of vital capacity. No. 3, for example, being only 85, instead of 246; No. 8, 60, instead of 238; and No. 7, 70, instead of 262—being a difference of 192 cubic inches. In all these cases both lungs were extensively diseased.

TABLE XVII.

*Showing the Comparison of Healthy and Diseased Cases in the First Stage of Phthisis, or before Softening.—(All Males.)*

Number of Cases.	Age.	Height.		Vital Capacity.		Difference.	REMARKS.
				Healthy.	Diseased.		
		Ft.	In.	Cubic Inches	Cubic Inches	Cubic In.	
1 ..	28	5	8	238	186	52	{ Both sides, and emphysema.
2 ..	28	5	4 $\frac{1}{4}$	206	140	66	
3 ..	37	6	2 $\frac{1}{2}$	286	270	16	
4 ..	20	5	3 $\frac{1}{4}$	198	120	78	
5 ..	27	5	7	230	85	145	
6 ..	45	6	0 $\frac{1}{2}$	270	200	70	
7 ..	36	5	6 $\frac{1}{2}$	222	182	40	
8 ..	36	5	5 $\frac{1}{2}$	214	170	44	
9 ..	35	5	7	230	160	70	
10 ..	38	5	10 $\frac{1}{4}$	254	140	114	{ Both sides, and emphysema.
11 ..	33	5	7	230	80	150	
12 ..	28	5	7 $\frac{1}{2}$	230	180	50	{ Much affected on both sides.
13 ..	27	6	1 $\frac{1}{2}$	274	260	14	
14 ..	24	5	6 $\frac{1}{4}$	222	190	32	{ Murmur heard over pulmonary artery.

TABLE XVIII.

*Showing the Comparison of Healthy and Diseased Cases in the Second Stage of Phthisis, or after Softening.—(All Males.)*

Number of Cases.	Age.	Height.		Vital Capacity.		Difference.	REMARKS.
				Healthy.	Diseased.		
		Ft.	In.	Cubic Inches	Cubic Inches	Cubic In.	
1 ..	27	5	6	214	86	128	
2 ..	21	5	5½	214	60	154	
3 ..	45	5	9¼	246	85	161	
4 ..	30	5	6¾	222	70	152	
5 ..	33	5	8½	238	70	168	
6 ..	26	5	6¼	222	50	172	
7 ..	28	6	0	262	70	192	
8 ..	38	5	8	238	60	178	
9 ..	41	5	9¾	246	90	156	
10 ..	42	5	8	238	60	178	
11 ..	29	5	5½	214	50	164	
12 ..	32	5	7	230	70	160	
13 ..	42	6	0	270	140	130	
14 ..	29	6	2	286	150	136	

Tables XIX., XX., and XXI. present the result of observations made with the Spirometer on 415 cases of Phthisis. Table XIX. includes all cases, without reference to the stage of the disease; Table XX. all those who were in the first stage of the disease when the observations were made; and Table XXI., the cases in the second stage in which there was distinct evidence of softening, or of the existence of a cavity.

TABLE XIX.

*Showing the Vital Capacity of Phthisical Patients, taken indiscriminately, without reference to the Stage of the Disease, compared with that of the same number of Healthy Individuals.*

Number of Cases observed.	Mean Vital Capacity.		Difference.	Difference per Cent.
	In Health.	In Cases of Phthisis (all stages.)		
	Cubic Inches.	Cubic Inches.	Cubic Inches.	Cubic Inches.
415	222	129	93	42

TABLE XX.

*Showing the Comparison of Healthy Individuals and of Cases of Phthisis, in the Stage before Softening.*

Number of Cases observed.	Mean Healthy Vital Capacity.	Mean Diseased Vital Capacity.	Difference.	Difference per Cent.
241	Cubic Inches. 223	Cubic Inches. 149	Cubic Inches. 74	Cubic Inches. 33

TABLE XXI.

*Showing the Comparison of Healthy Individuals and Cases of Phthisis, in the Stage after Softening.*

Number of Cases observed.	Mean Healthy Vital Capacity.	Mean Diseased Vital Capacity.	Difference.	Difference per Cent.
174	Cubic Inches. 221	Cubic Inches. 105	Cubic Inches. 116	Cubic Inches. 52

In forming these Tables, the sum of the capacities, whether in health or disease, has been divided by the number of cases in order to determine the means. It is interesting to observe how evidently they establish the fact, that the Spirometer gives distinct indications at an early period of the malady, and that these indications become more obvious in proportion to the progress of the disease. For instance, in the first stage, the diminution of vital capacity in a range of 241 cases is 74 cubic inches; but in 174 patients, after the stage of softening, the diminution is no less than 116.

It is proper to mention that some Patients, in their early trials with the instrument, in consequence of nervousness or inexperience, do not expire an amount of air equal to their vital capacity. In such cases, therefore, unfavourable conclusions must not be too hastily drawn; but, on the other hand, whenever an individual under six feet expires his average quantity, it may, we think, be generally inferred that he is free from tubercular disease. In various individuals, in whom there were circumstances calculated to excite some suspicion of the existence of disease, the favourable indications furnished by the Spirometer have enabled the Medical Officers to pronounce an encouraging opinion, which, in the sequel, has been confirmed. It must be added, that various other circumstances may prevent a Patient from expiring the average quantity of air indicated by his height, such as Pneumonia, Emphysema,



Hernia, or Abdominal Tumours, Diseased Heart, &c. A deficiency of vital capacity alone cannot, therefore, be considered a proof of the existence of Phthisis; but these Tables are given for the purpose of showing that, where Consumption was present without any of these accidental circumstances, the vital capacity in all the cases was more or less diminished.

*b—Hæmoptysis.*—The Medical Officers, in investigating those symptoms, general or local, which are calculated to throw light on the existence and early progress of Consumption, have paid considerable attention to Hæmoptysis; for amongst other reasons, spitting of blood is often the first circumstance which attracts observation, and frequently excites in the minds of Patients and their friends considerable alarm.

The existence or non-existence of this symptom was carefully noted in 1,381 cases of Phthisis, of whom it will be seen in the Table, 910 were males, and 471 females.

TABLE XXII.

*Showing the Existence or Non-Existence of Hæmoptysis in 1,381 Cases of Phthisis, arranged according to the Sexes, without reference to Age.—Males, 910; Females, 471—Total, 1,381.*

	Males.	Per Cent.	Females.	Per Cent.	Total.	Per Cent.
Hæmoptysis ..	563	61.9	307	65.2	870	63
No Hæmoptysis ..	347	38.1	164	34.8	511	37

Of the 1,381 cases, 870 individuals, including males and females, had Hæmoptysis at some period or other of the disease, that is, in the ratio of 63 per cent.\*

In recording the facts which have reference to the absolute frequency of this symptom, it seems desirable to consider the influence of Age and Sex, and the period of the disease at which it occurred:—

*1st.—Sex.*—In investigating the influence of Sex on the occurrence of this symptom, it will be seen from Table XXII. that in 910 males Hæmoptysis was

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\* It may be remarked that a large proportion of the cases of Phthisis recorded in the Table were seen at an *early* period of the disease, and that not a few of them were only for a short time under observation. Many of those in whom the symptom had not occurred when their cases were first noted, would, in all *probability*, be sufferers from it during the further progress of the disease; so that we believe we are justified in assuming that the proportion of cases in which Hæmoptysis occurs in Phthisis is still greater than that shown in this Table.

recorded in 563 cases, or in the ratio of 62 per cent.; and in 471 females this symptom was observed in 307 cases, or in the ratio of 65 per cent. The influence of Sex is thus shown to be very slight in determining the occurrence of Hæmoptysis, during the progress of Phthisis. It appears that an inference may be safely drawn from that fact as to the paramount influence of tubercular disease of the lungs itself in the production of Hæmoptysis. Daily experience affords numerous examples of the occurrence of *spitting of blood* by non-Phthisical females, resulting from irregularities peculiar to the Sex, and to which males are not prone,—cases of this description have been carefully excluded from the list; and yet, on reviewing the results presented in the preceding Table, the influence of Sex almost entirely disappears; and nearly an equal number of males and females are found to present this symptom.

*2nd.—Age.*—The observations on the ages at which Hæmoptysis did or did not occur were made in 1,084 cases, of whom 706 were males, and 378 females.

TABLE XXIII.

*Showing the existence or non-existence of Hæmoptysis in 1,084 Cases of Phthisis—viz., Males, 706; Females, 378—arranged according to the Sexes in Decennial Periods. Also, the per Centage of the Cases in which Hæmoptysis occurred.*

Age.	Hæmoptysis occurred.		Hæmoptysis did not occur.		Total of Cases observed.		Hæmoptysis occurred per Cent.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
0 to 5..	0	3	2	4	2	7	..	42.9
5 to 15..	7	32	14	9	21	41	33.3	78.0
15 to 25..	124	107	85	45	209	152	59.3	70.4
25 to 35..	175	59	71	42	246	101	71.1	58.4
35 to 45..	115	35	48	25	163	60	70.6	58.3
45 to 55..	29	7	23	8	52	15	55.8	46.7
55 to 65..	3	0	10	2	13	2	23.1	..
65 to 75..	0	0	0	0	0	0	..	..
Totals ..	453	243	253	135	706	378	64.2	64.3

Of the 706 males, 453 had Hæmoptysis; and of the 378 females, 243 were similarly affected; being in each Sex on the whole number in the ratio of 64 per cent. Dividing the period of life during which Phthisis occurs, according to our observations—that is from birth to 70 years of age—into two equal



intervals, viz., from infancy to 35 years, and from 35 to 70, we find in these periods respectively that in males under 35 years Hæmoptysis occurred in 306 out of 478 cases of the disease, being in a ratio of 64 per cent; whilst in 301 females, at the same period of life, it occurred in 201 cases, being in the ratio of nearly 67 per cent.: hence the inference may be drawn that Hæmoptysis is slightly more frequent in the first of these periods in females than in males. In the second period, that above 35, we find Hæmoptysis to have occurred in 147 males out of 228 cases, being again in the ratio of about 64 per cent.—very nearly that of the antecedent period in the same sex; whilst 42 instances of Hæmoptysis were met with in 72 cases in females above the age of 35, that is, in the ratio of 54.6 per cent. The facts are shown in Table XXIV.—

TABLE XXIV.

*Showing the Relative Frequency of Hæmoptysis in Males and Females at Certain Ages.*

AGE.	Hæmoptysis occurred.		Total cases observed.		Hæmoptysis per Cent.	
	Males.	Females.	Males.	Females.	Males.	Females.
0 to 35 ..	306	201	478	301	64.	66.8
35 to 70 ..	147	42	228	77	64.5	54.6
5 to 25 ..	131	139	230	193	57.	72.
25 to 45 ..	290	94	409	161	70.9	58.4
35 to 55 ..	144	42	215	77	67.	54.6

Thus, whilst on the one hand, we see this symptom occurring in males with an equal frequency before and after the age of 35, *i.e.*, apparently uninfluenced by age in this sex, we find, on the other hand, a different and unexpected result in females. This difference, although only to the extent of 10 per cent., shows the proportion of cases in females to be greater before the age of 35 than after; to which latter period (according to some observers) its greater frequency has been assigned. In fact, our observations show that Hæmoptysis occurs more frequently during the *earlier part* of female life, than at that period when the functions of the uterus begin to be suspended.

This difference will appear still more marked if we take two periods of life more clearly separated. Thus we find that in females from 5 to 25 years Hæmoptysis occurred in 139 cases out of 193, being in the ratio of 72 per cent.; whilst between the ages of 35 and 55 this symptom presented itself in

42 cases out of 77, being only in the ratio of 55 per cent. If, however, we turn to the numbers recorded in the male sex, during the same periods, we find the proportions reversed, for between the age of 5 and 25 Hæmoptysis was noted in 131 cases out of 230, or in the ratio of 57 per cent.; and between 35 and 55, 144 cases out of 215, or in the ratio of 67 per cent.

It will be further seen, on reference to the Table, that whilst in Phthisical females, Hæmoptysis most frequently occurred between the ages of 5 and 25, viz., in the ratio of 72 per cent., the period of its most frequent occurrence in males is between the ages of 25 and 45; for out of 409 cases of Phthisis, within those two decennial periods, 290 were attended with Hæmoptysis, being in the ratio of 71 per cent.; whereas in the same (*male*) sex, under the age of 25, it occurred in the ratio of only 57 per cent., and between the ages of 45 and 65 the ratio is even under 50 per cent.

*3rd.—Stage of the Disease.*—The stage of the disease in which Hæmoptysis occurred was noticed in six hundred and ninety-six cases, of whom four hundred and fifty-three were males, and two hundred and forty-three were females.

TABLE XXV.

*Showing the Stages of Phthisis at which Hæmoptysis occurred in 696 Cases of the Disease. Males, 453; Females, 243.*

	Males.	Per Cent.	Females.	Per Cent.
Before Softening ..	333	73.5	176	72.4
After Softening ..	120	26.5	67	27.6

The disease was considered as being appropriately divisible, for the purpose of these observations, into two phases or periods; viz., 1st. That characterised by the deposition of tubercular matter in the crude state; and, 2nd. That subsequent to the softening of this matter, or the formation of cavities. We find from the Table, that in four hundred and fifty-three males, Hæmoptysis took place in three hundred and thirty-three cases, during the first of these periods, that is, in the ratio of 73 per cent, and in two hundred and forty-three females it occurred during the same period in 176 cases, being in the ratio of 72 per cent. In the second period we find this affection present in the same number (453) of males, in one hundred and twenty instances, a ratio of 26 per cent., and in two hundred and forty-three females, in 67 cases, being in the ratio of 28 per cent.



These figures show unquestionably that Hæmoptysis is much more frequent (nearly as 3 to 1) in the first period of the disease, and nearly equally so in both sexes.\*

Without entering at any length into the pathological causes of this marked difference, we may refer to an explanation which suggests itself, viz., that the blood-vessels of the lungs are, in the first stage of the disease, exposed to the irritating influence of the deposited matter; they are then, too, subjected to partial compression and congestion, and there can be little difficulty in supposing that blood itself, or its colouring matter, will, under these circumstances, escape from them, either alone or along with the matter then being deposited; whilst, at a later period of the disease, these vessels become obstructed or obliterated by the tubercular deposits, or in consequence of the inflammatory action by which the various lesions have been circumscribed or bounded. Indeed, it seems not improbable that many examples of Hæmoptysis, in the more advanced stage of the disease, are the result rather of fresh tubercular deposition and its effects, than of the lesions of vessels connected with cavities.

It will be obvious that the fact of the frequent occurrence of Hæmoptysis at an early period of the disease, so clearly shown in the above Table, tends strongly to establish its value as a diagnostic symptom in early Phthisis.

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### III.—DURATION OF THE DISEASE, AND RESULTS OF TREATMENT.

*a—Duration of the Disease.*—The following Table (No. XXVI.) exhibits the duration of Consumptive disease in 215 cases, of which 147 were males, and 68 females, arranged, as respects age, in decennial periods. This number (with the exception of 14, in which the duration was marked “doubtful,”) includes those cases only in which the duration of the disease had been ascertained with tolerable accuracy—a matter not attainable in all cases.

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\* The occurrence or non-occurrence of Hæmoptysis was noted when the patients first presented themselves for observation. In many of those, however, in whom the disease had reached the stage of softening, Hæmoptysis had taken place some time previously, so that we have no doubt, but that in a larger proportion than is here stated, it occurred in the *first* stage of the disease.





It appears, from an examination of this Table, that Phthisis rarely proves fatal in less than three months, only one case being recorded as having been fatal within that period. The disease existed in 22 of the 215 cases for a period of between three and six months; of these 22 cases,  $11\frac{1}{2}$  per cent. were males, and a little more than  $7\frac{1}{4}$  per cent. were females. In 36 cases the disease lasted from six to nine months; of these, 19 per cent. were men, and 12 per cent. women. The disease existed for a period of from nine to twelve months in 30 cases, of whom about 15 per cent. were males, and nearly 12 per cent. females. The half-yearly periods, extending in the Table from twelve months to four years, contain, in each period, with one trifling exception, a decreasing number of cases. For whilst we observe that nearly 17 per cent. of the cases have a duration of from six to nine months, not 2 per cent. are found in the period from three and a-half years to four. Fourteen persons, that is  $6\frac{1}{2}$  per cent., lived for periods above four years. We observe, on examining the Table a little further, that considerably more than half the entire number of cases were fatal within a period of eighteen months,—the numbers being 123 to 78. In reference to the influence of sex, we observe a remarkable fact, viz.—that the disease is more rapidly fatal amongst males than females: thus, of the 123 cases which terminated within eighteen months, 89, or 60·5 per cent., were males; whilst only 34, or 50 per cent., were females. After a period of eighteen months, the duration is reversed,—of 78 cases, 47, or 31·9 per cent., were males, whilst 31, or 45·5 per cent., were females.

*b—Results of Treatment.*—For the purpose of illustrating this important subject, the In-Patients and Out-Patients, for self-evident reasons, are separately classified. The length of time during which the In-Patients remain in the Hospital, the subjects of close observation, affords ample opportunity for forming tolerably accurate conclusions respecting the degree in which the disease is amenable to treatment. This has been found to vary from simple amelioration to complete arrest. The Patients are therefore classed according to the amount of benefit they have received; by the term *relieved* is implied a simple diminution or cessation of some of the more distressing symptoms, so long as the Patient remained under observation; by *much relieved* is meant the removal of the principal symptoms,—the health of the Patient, though improved, being still delicate; the term *arrest* (without entering into the question of the curability or non-curability of Consumption, or defining these terms with reference to this disease), implies that all or nearly all symptoms of the disease have disappeared, the Patients feel themselves well, and are able to pursue their ordinary occupations. In some of these cases the evidence of local mischief had greatly diminished, and in a few had disappeared: such Patients being, in fact, scarcely in a worse position than they were before the attack. The other terms speak for themselves.



## Results of Treatment.

TABLE XXVII.

*Showing the Results of Treatment in 535 In-Patients, classified according to Age, Sex, and the Stage of the Disease.\**

AGES.	SEXES.	First Stage.						Second Stage.						Third Stage.						All.
		Relief.	Much Relief.	Arrest.	Non-Arrest.	Death.	Total.	Relief.	Much Relief.	Arrest.	Non-Arrest.	Death.	Total.	Relief.	Much Relief.	Arrest.	Non-Arrest.	Death.	Total.	
0 to 5 ..	{ Males ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	{ Females ..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1
5 to 15 ..	{ Males ..	..	..	2	..	..	2	1	..	..	..	..	1	1	1	..	1	1	4	7
	{ Females ..	2	..	..	..	..	2	1	..	..	..	..	1	..	..	..	..	1	1	4
15 to 25 ..	{ Males ..	9	11	2	1	..	23	6	3	1	3	..	13	9	12	2	13	17	53	89
	{ Females ..	23	21	3	2	..	49	2	2	..	..	1	5	6	5	1	9	9	30	84
25 to 35 ..	{ Males ..	11	14	3	1	1	30	9	5	..	1	..	15	18	8	3	13	20	62	107
	{ Females ..	10	10	3	2	..	25	4	1	..	..	..	5	14	6	1	7	16	44	74
35 to 45 ..	{ Males ..	12	6	2	2	..	22	5	..	..	1	..	6	15	8	1	9	18	51	79
	{ Females ..	4	3	..	..	..	7	1	1	1	..	..	3	4	2	2	6	8	22	32
45 to 55 ..	{ Males ..	12	8	3	..	..	23	2	1	..	..	..	3	6	2	..	2	4	14	40
	{ Females ..	..	2	..	..	..	2	..	1	..	..	..	1	2	..	..	4	1	7	10
55 to 65 ..	{ Males ..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	3	4	4
	{ Females ..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1
65 to 75 ..	{ Males ..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	2	2
	{ Females ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	1
All Ages ..	Both Sexes ..	85	75	18	8	1	187	31	14	2	5	1	53	77	44	10	66	98	295	535

With the view of rendering more clear the results contained in the preceding Table, we have prepared from it the following abstract, viz.—

TABLE XXVIII.

*Showing the Per Centages of the preceding Results in each Stage of the Disease in Males and Females.*

Stages.	Sexes.	Relieved per Cent.	Much Relieved per Cent.	Disease Arrested per Cent.	Disease not Arrested per Cent.	Died per Cent.
First.. ..	{ Males ..	44.0	39.0	12.0	4.0	1.0
	{ Females ..	47.1	41.3	6.8	4.5	0.0
Second ..	{ Males ..	60.5	23.6	2.6	13.1	0.0
	{ Females ..	53.3	33.3	6.6	..	6.6
Third ..	{ Males ..	26.8	16.3	3.1	20.5	33.1
	{ Females ..	24.7	12.3	3.8	25.7	33.3
All .. ..	Both.. ..	36.0	24.8	5.6	14.7	18.6

\* The In-Patients who were under the care of one of the Physicians, who has resigned, are not included in this Table, nor in any save those which relate to the numbers, ages, sexes, occupations, and social conditions of the Patients.



From an examination of this Table, we find that nearly one-half the Patients, both males and females, who seek relief in the first stage of the disease, obtain to a limited extent. In about 40 per cent. of the cases the material benefit implied in the term *much relieved* is conferred, the sexes being in nearly equal proportions. In 12 per cent. of the males applying in the first stage of the disease its progress appears to have been, for the time at least, if not completely, arrested; whilst in less than 7 per cent. of the females was the like result obtained. In 4 per cent. of the males and in  $4\frac{1}{2}$  per cent. of the females the disease resisted treatment in this stage, and progressed rapidly to a fatal termination. In one case death occurred in this the first stage of the disease.

In the second stage of the disease we find that about 60 per cent. of the males and about 53 per cent. of the females have the distressing symptoms under which they suffer more or less relieved; in about 23 per cent. of the first-mentioned sex and 33 per cent. of the latter a more material degree of benefit is conferred. The very small number of cases arrested in this stage is quite in accordance with what might have been *a priori* expected. When the softening process, characteristic of this stage of Pulmonary Consumption, has commenced, the formation of cavities is an almost inevitable result; the number of females slightly exceeds that of males, the converse of what occurs in the preceding stage: the numbers, however, are too few to justify any positive deductions as to the apparent influence of sex. The disease proceeded unarrested in about 13 per cent. of the males. We can only account for no females appearing under this head by supposing that the disease had either been relieved or passed into the third stage before they came under observation; one death occurred in this stage in fifteen females.

In the third stage, we find that in about 25 per cent. of both sexes the symptoms were mitigated by treatment; 16 per cent. of males and 12 of females, in addition to the preceding, were very much benefitted, and in a little more than 3 per cent. of males and nearly 4 per cent. of females the progress of the disease was arrested. In about 20 per cent. of males and 25 per cent. of females the disease progressed unchecked whilst under observation. In 33 per cent. of each sex who applied in this stage of the disease death occurred. Viewing these results collectively, without reference to stage or sex, we find that benefit is conferred in 36 per cent. of the cases, material relief in nearly 25 per cent.; in nearly 6 per cent. the disease is arrested; and here it should be borne in mind that the delay which occurs in the admission of Patients, in consequence of the want of accommodation for

the numbers who apply, allows the disease to advance, and thus renders the treatment more difficult, and less successful than it would otherwise have been. Still, under such unfavourable circumstances, it is satisfactory to find that, in nearly 6 per cent. of the cases of this disease considered by many to be beyond the reach of treatment, a result has been obtained, which a desire not to speak too confidently alone forbids to designate as cure. In nearly 15 per cent. the disease was unchecked by treatment, and was fatal in the Hospital in  $18\frac{1}{2}$  per cent. of the cases admitted.

*Results of Treatment of Out-Patients.*—Amongst these two distinct classes of cases are to be found—the Consumptive and non-Consumptive. As the report applies exclusively to the former, it will suffice to say that the latter is a very numerous one; for great numbers daily seek relief at the Hospital, suffering, as has already been mentioned, from Bronchitis and other diseases of the lungs, not tubercular; from heart disease; from disease and derangement of the digestive organs, simulating Consumption; and from various other obscure debilitating influences. The majority of these cases become objects of solicitude; for though they may not be at the moment actually the victims of Pulmonary Consumption, experience has shown that the diseases for which they seek relief, if neglected, render the system liable to its attacks. These cases are relieved in great numbers; and thus many victims are saved from the consequences of protracted disease and suffering. Amongst the Consumptive Out-Patients the results have been satisfactory, though it is difficult to ascertain them with accuracy, owing to the well-known habits of Hospital Out-Patients, who, when they have obtained relief, are so anxious to return to their occupations that they neglect to report their condition. The great distance\* at which many of the Patients live from the Hospital contributes to the same result. It would be very desirable, indeed, if the subscribers, in giving letters of admission to Out-Patients, would point out to them the necessity of reporting personally, or by letter, to their respective Physicians before they cease to attend. From a number sufficiently large to afford pretty accurate conclusions, we find that in the first stage including males and females, the symptoms are more or less relieved, in about 35 per cent.; in about 33 per cent. they are much relieved; in 18 per cent. the disease appears to have been arrested; in 12 per cent. it passed into more advanced stages. Placing together

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\* Many Patients receive medicine from the Hospital, attending in person occasionally, but living at distances, even within a circuit of some 50 or 60 miles or more.



the second and third stages we find relief given in about 23 per cent. ; in 24 per cent. the relief was material ; and in  $4\frac{1}{2}$  per cent. the disease was arrested ; in 48 per cent. it remained unchecked, or progressed to a fatal termination.

When it is recollected that the average daily attendance of Out-Patients is 120, and that of the non-Consumptive a large majority are cured,—that of the Consumptive, more than one-half have their sufferings so much relieved as to enable them to pursue their usual occupations, even whilst under treatment, and many to have them removed altogether,—an estimate can be formed of the amount of benefit conferred by the charity, without any extended or illustrative comment.

*c—Treatment.*—In making some observations on the treatment of Consumption pursued at this Institution, the medical officers feel it a duty to bear testimony to the judgment evinced in the selection of a site for the Hospital, and the excellence of the arrangements for promoting the health and comfort of the Patients. To those unacquainted with the locality it will be necessary to say, that the Hospital is built on a dry gravelly soil, in a suburb of the metropolis long celebrated for its salubrity, sheltered on the north and east by the whole of the metropolis, and open to the south and west ; the wards are lofty, and of moderate size ; the corridors light and capacious ; whilst the coldness and dampness of our atmosphere, so highly injurious in diseases of the respiratory organs, are corrected by the method of ventilation devised by Dr. Arnott, and which is so arranged as to supply warm fresh air in a continuous stream at the rate of 2,160 cubic feet per minute, thus allowing to each Patient, during that time, more than 23 cubic feet. This air reaches the wards so modified as to keep them at the uniform temperature of nearly  $65^{\circ}$  in winter and summer. There is thus provided for the poor a climate nearly approaching that of the southern latitudes, the advantages of which can only be enjoyed by the more favoured portion of the community. The beneficial effects of these arrangements upon the Patients are strikingly manifested in the great improvement which generally takes place in their symptoms soon after admission ; the cough becomes less frequent and the expectoration diminishes, they lose the anxious expression of countenance frequently attending the disease, and strangers who visit the Hospital often express their surprise at the quiet and comfort of the Patients, and their comparative freedom from cough. It is proper to mention, that though a majority of the Patients are sensible of deriving benefit from the warmth of the atmosphere of the Hospital, certain individuals, owing to peculiarity of constitution or disease, find it oppressive. A similar statement applies to Madeira and like climates.



Of the strictly medical treatment of the disease a detailed description would be inappropriate in the pages of this Report; the medical officers limit themselves, therefore, to a brief statement of the results of the use of a few particular remedies which have attracted attention.

Much has been accomplished, especially at the early period of the disease by acting upon those general principles which are familiar to every medical practitioner for strengthening the digestive powers, correcting pulmonary congestion, improving the condition of the blood, and administering those remedies which are considered suited to particular symptoms.

*Naphtha.*—Amongst the medicines alleged to have curative powers, a fair trial has been given to Pyro-acetic Spirit or Naphtha. There are some complications of Phthisis, such as Bronchitis, attended with profuse secretion, in which it has appeared occasionally to exert a favourable influence—moderating the secretion, improving the appetite, and increasing the strength; but it was not observed to possess any specific power of suspending or ameliorating tubercular disease of the lungs, and in many cases it acted very injuriously.

*Iron.*—The pale and anæmic condition of many Consumptive Patients and the deficiency of red globules in their blood, (as shown by experiments of Andral and Gavarret), naturally suggested to us, in common with the profession, the use of Iron; especially as when administered to the lower animals, this agent is stated to possess the power of arresting the formation of tubercles. It has been used in different stages of the disease, and in various forms, such as the Iodide, Phosphate, Sulphate, Sesquichloride, and Citrate. During the first stage of the disease, in the absence of Pulmonary Congestion and Hæmoptysis, it has been found useful to the extent of arresting its progress; but the utmost benefit which persons in the later stages have derived from this remedy are, an increase of strength and a temporary improvement of general health.

*Cod Liver Oil.*—This substance is entitled to special notice, as having been productive of more good in the treatment of Phthisis than any other agent yet employed. The earliest trials of this remedy made on a large scale were those instituted at the Hospital; and it has now been given in many hundred cases. The results of all these, for reasons already mentioned, cannot be given, but its effects are shown in 542 cases, in the following Table.

TABLE XXIX.

Showing the Results of the Administration of Cod Liver Oil in 542 Cases of Consumption, arranged according to the Stage of the Disease, the Ages and Sexes of the Patients.

RESULTS.	First Stage.										Second and Third Stages.										All Stages.	
	Under 15.		15 to 35.		Over 35.		Total.		Per Cent.		Under 15.		15 to 35.		Over 35.		Total.		Per Cent.		All Ages.	
																					Both Sexes.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.	Per Ct.
Improved ....	10	4	99	49	28	11	137	64	72.1	62.1	2	4	58	54	14	9	74	67	53.2	60.9	342	63.1
Arrested.....	3	4	30	23	1	2	34	29	17.8	23.1	0	4	18	11	2	0	20	15	14.3	13.6	98	18.1
Not improved.	0	0	14	8	5	2	19	10	10.0	9.7	2	1	34	25	9	2	45	28	32.3	25.4	102	18.8
Total .....	21		223		49		190	103	—		13		200		36		139	110	—		542	—

Of these 542 cases 293 were in the first stage of the disease, and 249 in the second and third, or those stages subsequent to softening; of those in the first stage, 190 were males, and 103 were females. Applying to these cases the terms already used, it will be observed that 72 per cent. of the males, and 62 per cent. of the females, had these symptoms materially improved; in nearly 18 per cent. of the males, and in 28 per cent. of the females, the disease was arrested; in 10 per cent. of the males, and in nearly 10 per cent. of the females, the disease progressed unchecked. Of the 249 Patients in the second stage of the disease, 139 were males, and 110 females. In 53 per cent. of the males, the symptoms were materially improved, and in nearly 61 per cent. of the females. In a little more than 14 per cent. of the males, and in nearly 14 per cent. of the females, the disease was arrested. In a little more than 32 per cent. of the males, and in 25½ per cent. of the females, the disease was not arrested. Viewing these results collectively, we find in about 63 per cent. the symptoms improved; in 18 per cent. the disease arrested; and in 19 per cent. it went on unchecked. When it is recollected that of the whole number treated at this Hospital, the disease was arrested in only 5 per cent., the value of this remedy, under the use of which the disease appears to have been arrested in 18 per cent. of the cases, must be considered very great.

Different qualities of oil have been tried, without exhibiting any marked



difference in their remedial effects ; but the offensiveness of some of the darker kinds renders their general use impracticable. The oil now used is straw-coloured transparent, and free from offensive smell. Patients in general take it without repugnance. The dose at first is 1 drachm three times a-day for an adult; but it is gradually increased in some few cases to 1½ oz. for a dose. It is usually administered in camphor-water, any aromatic water, bitter infusions, milk, or any other agreeable fluid. When there is great irritability of stomach it has been given in mucilage of gum with a few drops of hydrocyanic acid. In cases where there existed great anæmia and debility, and in those where the effect of the oil seemed slight, preparations of quinine and iron, especially the iodide have been conjoined with advantage. It has appeared advantageous to intermit its use for a few days when nausea and feverishness, from whatever cause produced, are present. In certain cases the use of the oil has been continued during the existence of slight hæmoptysis, without producing any injurious results.

Other animal oils (not derived from the liver) and vegetable oils have been tried with a view of ascertaining how far their operation resembled that of Cod Liver Oil. The experiments hitherto made have not shown them to possess the same powers; but they have not been as yet sufficiently often repeated to warrant decided conclusions.

One of the most striking effects of the use of Cod Liver Oil is an increase in the Patient's weight; with a view of showing the frequency with which this occurs, the following Table has been drawn up.

Table XXX.

*Showing the gain or loss of weight in 219 cases of Consumption treated by Cod Liver Oil, arranged as in the preceding Table.*

WEIGHT.	First Stage.										Second and Third Stage.										All Stages.	
	Under 15.		15 to 35.		Over 35.		Total.		Per ct.		Under 15.		15 to 35.		Over 35.		Total.		Per Ct.		All Ages.	
																					Both Sexes.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.	Per Ct.
Gained .....	8	2	50	20	12	3	70	25	78.6	67.5	1	3	22	18	10	4	33	25	61.1	64.1	153	69.8
Lost .....	0	0	8	8	0	0	8	8	8.9	21.6	0	0	13	6	6	6	19	12	35.1	30.7	47	21.4
Stationary ....	2	1	7	3	2	0	11	4	12.3	10.8	0	0	2	1	0	1	2	2	3.7	5.1	19	8.6
Total .....	13		96		17		89		37		4		62		27		54		39		219	



From this Table it appears, that taking both stages of the disease and the cases collectively, a gain of weight occurred in 70 per cent., a loss of weight only 21 per cent., and in about  $8\frac{1}{2}$  per cent. the weight remained stationary. The amount of the increase varied, being in some patients little more than one or two pounds during several months; whilst, in many, the average increase was from a pound to two pounds weekly during several weeks. Some very remarkable instances of great increase of weight have presented themselves,—thus, in one instance, 41 pounds were gained in 16 weeks; in another,  $19\frac{1}{2}$  pounds were gained in 28 days, and 10 pounds in the succeeding 10 days; in another case, 29 pounds were added to the Patient's weight in 31 days. It must be observed, that an amelioration of the symptoms did not invariably follow an increase of weight, though the exceptions were rare. An aggravation of the symptoms and a diminution of weight were almost invariable coincidences. In a few cases the symptoms improved, though the weight remained stationary, or even became slightly diminished. It is right to mention that in some of the cases marked stationary in the Table (XXX.), the first effects, though encouraging, were not permanent. In other cases where the amelioration was still more considerable, and the progress of the disease appeared to have been stayed, relapse occurred, and was followed by a rapid progress to a fatal issue. That such cases do occur requires to be remembered, in order to restrain too sanguine expectations, and prevent the remedy from falling into the discredit which disappointment after unlimited confidence may induce. On the other hand, without entering into a description of the successive steps of amelioration experienced by patients (which have been already described under the head of Results of treatment), it will suffice to say, that many of the cases included in the 18 per cent., in whom the disease is marked arrested, felt themselves as well as they had been before the attack of the disease. In some of these cases there was, as already stated, a decided and progressive diminution in the local mischief. A comparatively few of such cases having returned to the Hospital after a lengthened interval, it is not too much to assume that the improvement is permanent,—it is so in some cases which are under observation.

From these facts and a more extended experience, since the period at which this Report terminates, no other conclusion can be drawn than that Cod Liver Oil possesses the property of controlling the symptoms of Pulmonary Consumption, if not of arresting the disease, to a greater extent than any other agent hitherto tried.

*Inhalations* have been tried under a variety of circumstances, and with

benefit to some of the distressing symptoms, such as cough and difficulty breathing. Experiments, with a view of ascertaining the simplest means using these agents, being now in course of trial, remarks on their use are reserved for a subsequent Report.

*Counter-irritation* has been found useful in many cases in which local congestion existed, or in which cough and abundant secretion were distressing. In many of these cases, a solution of Iodine and Iodide of Potassium in Alcohol sufficiently strong to produce vesication, applied with a camel's-hair brush, was found remarkably beneficial.

Night Sweats have been relieved in very many cases, by the use of Gall Acid in doses of five or six grains, combined with Morphia; in the treatment of Diarrhoea, recent experience has shown that the Trisnitrate of Bismuth, when perseveringly administered, often proves a most safe and effectual remedy.

In concluding this first Report, the medical officers of the Hospital for Consumption hope to be able hereafter to continue the production of equally systematic and definite illustrations, not only of subjects not fully noticed here but of others of equal interest; and thus, whilst rendering the Institution useful in developing or confirming scientific and practical knowledge as well as in relieving the objects of the charity, to demonstrate how happily the advancement of science may be combined with the exercise of benevolence.